Comp. Biochem. Physiol. Vol. 155C, No. 4 pp. I–V, 2012

ELSEVIER

CONTENTS OF VOLUME 155

Vol. 155C, No. 1

Special Issue dedicated to 5th Aquatic Animal Models of Human Disease meeting: Corvallis, OR, USA, September 20–22, 2010

Edited by: Lynne A. Fieber

	1	In Appreciation
Editorial		
L.A. Fieber, R.L. Tanguay, R.B. Walter and D.E. Williams	9	Aquatic animal models of human disease: Selected papers from the 5th Conference
Z. Zhang, M.C. Wells, M.G. Boswell, I. Beldorth, L.M. Kirk, Y. Wang, S. Wang, M. Savage, R.B. Walter and R.E. Booth	11	Identification of robust hypoxia biomarker candidates from fin of medaka (*Oryzias latipes*)
N.K.M. Cheung, D.E. Hinton and D.W.T. Au	18	A high-throughput histoarray for quantitative molecular profiling of multiple, uniformly oriented medaka (*Oryzias latipes*) embryos
E. Ho, S. Dukovcic, B. Hobson, C.P. Wong, G. Miller, K. Hardin, M.G. Traber and R.L. Tanguay	26	Zinc transporter expression in zebrafish (*Danio rerio)* during development
L.R. Williams, K. Wong, A. Stewart, C. Suciu, S. Gaikwad, N. Wu, J. DiLeo, L. Grossman, J. Cachat, P. Hart and A.V. Kalueff	33	Behavioral and physiological effects of RDX on adult zebrafish
K.N. Mutoji and D.G. Ennis	39	Expression of common fluorescent reporters may modulate virulence for *Mycobacterium marinum*: Dramatic attenuation results from Gfp over-expression
T.R. Tiersch, H. Yang and E. Hu	49	Outlook for development of high-throughput cryopreservation for small-bodied biomedical model fishes
H. Yang, M.G. Savage, L. Hazlewood, R.B. Walter and T.R. Tiersch	55	Offspring production with cryopreserved sperm from a live-bearing fish *Xiphophorus maculatus* and implications for female fecundity
A.A. Fernandez, L. Paniker, R. Garcia and D.L. Mitchell	64	Recent advances in sunlight-induced carcinogenesis using the *Xiphophorus* melanoma model
J. Regneri and M. Schartl	71	Expression regulation triggers oncogenicity of *xmrk* alleles in the *Xiphophorus* melanoma system
A.N. Perez, L. Oehlers, S.J. Heater, R.E. Booth, R.B. Walter and W.M. David	81	Proteomic analyses of the *Xiphophorus* Gordon–Kosswig melanoma model
K.P. Downs, Y. Shen, A. Pasquali, I. Beldorth, M. Savage, K. Gallier, T. Garcia, R.E. Booth and R.B. Walter	89	Characterization of telomeres and telomerase expression in *Xiphophorus*

T.I. Garcia, Y. Shen, J. Catchen, A. Amores, M. Schartl, J. Postlethwait and R.B. Walter	95	Effects of short read quality and quantity on a de novo vertebrate transcriptome assembly
Y. Shen, J. Catchen, T. Garcia, A. Amores, I. Beldorth, J. Wagner, Z. Zhang, J. Postlethwait, W. Warren, M. Schartl and R.B. Walter	102	Identification of transcriptome SNPs between *Xiphophorus* lines and species for assessing allele specific gene expression within F_1 interspecies hybrids
M.A. Thomas, P.P. Joshi and R.D. Klaper	109	Gene-class analysis of expression patterns induced by psychoactive pharmaceutical exposure in fathead minnow (*Pimephales promelas*) indicates induction of neuronal systems
D.E. Williams	121	The rainbow trout liver cancer model: Response to environmental chemicals and studies on promotion and chemoprevention
P. Huggins, C.K. Johnson, A. Schoergendorfer, S. Putta, A.C. Bathke, A.J. Stromberg and S.R. Voss	128	Identification of differentially expressed thyroid hormone responsive genes from the brain of the Mexican Axolotl (*Ambystoma mexicanum*)
A. Mancia, D.D. Spyropoulos, W.E. McFee, D.A. Newton and J.E. Baatz	136	Cryopreservation and in vitro culture of primary cell types from lung tissue of a stranded pygmy sperm whale (*Kogia breviceps*)
T. Li Chen, C. LaCerte, S.S. Wise, A. Holmes, J. Martino, J.P. Wise Jr., W.D. Thompson and J.P. Wise Sr.	143	Comparative cytotoxicity and genotoxicity of particulate and soluble hexavalent chromium in human and sperm whale (*Physeter macrocephalus*) skin cells
S.L. Carlson and L.A. Fieber	151	Unique ionotropic receptors for D-aspartate are a target for serotonin-induced synaptic plasticity in *Aplysia californica*
C. Lawrence, D.G. Ennis, C. Harper, M.L. Kent, K. Murray and G.E. Sanders	160	The challenges of implementing pathogen control strategies for fishes used in biomedical research
Z.M. Varga and T.R. Tiersch	167	Workshop and panel discussion: High-throughput cryopreservation of germplasm as an exchange currency for genetic resources
K.C. Cheng, D.E. Hinton, C.J. Mattingly and A. Planchart	169	Aquatic models, genomics and chemical risk management

Vol. 155C, No. 2

Review

R. González-Romero, C. Rivera-Casas, J. Fernández-Tajes, J. Ausió, J. Méndez and J.M. Eirín-López	175	Chromatin specialization in bivalve molluscs: A leap forward for the evaluation of Okadaic Acid genotoxicity in the marine environment

General papers

M. Giannapas, L. Karnis and S. Dailianis	182	Generation of free radicals in haemocytes of mussels after exposure to low molecular weight PAH components: Immune activation, oxidative and genotoxic effects
Q.-L. Yang, C.-L. Yao and Z.-Y. Wang	190	Acute temperature and cadmium stress response characterization of small heat shock protein 27 in large yellow croaker, *Larimichthys crocea*
J. Heumann, S. Carmichael, J.E. Bron, A. Tildesley and A. Sturm	198	Molecular cloning and characterisation of a novel P-glycoprotein in the salmon louse *Lepeophtheirus salmonis*
C.L. Azevedo Costa, I.S. Chaves, J. Ventura-Lima, J.L.R. Ferreira, L. Ferraz, L.M. de Carvalho and J.M. Monserrat	206	*In vitro* evaluation of co-exposure of arsenium and an organic nanomaterial (fullerene, C_{60}) in zebrafish hepatocytes

L.D. Neve, A.A. Savage, J.R. Koke and D.M. García	213	Activating transcription factor 3 and reactive astrocytes following optic nerve injury in zebrafish
S.I.L. Gomes, S.C. Novais, J.J. Scott-Fordsmand, W. De Coen, A.M.V.M. Soares and M.J.B. Amorim	219	Effect of Cu-nanoparticles versus Cu-salt in *Enchytraeus albidus* (Oligochaeta): Differential gene expression through microarray analysis
B. Paital and G.B.N. Chainy	228	Effects of salinity on O_2 consumption, ROS generation and oxidative stress status of gill mitochondria of the mud crab *Scylla serrata*
R.W.M. Kwong and S. Niyogi	238	Cadmium transport in isolated enterocytes of freshwater rainbow trout: Interactions with zinc and iron, effects of complexation with cysteine, and an ATPase-coupled efflux
L.W. Kist, D.B. Rosemberg, T.C.B. Pereira, M.B. de Azevedo, S.K. Richetti, J. de Castro Leão, J.S. Yunes, C.D. Bonan and M.R. Bogo	247	Microcystin-LR acute exposure increases AChE activity via transcriptional *ache* activation in zebrafish (*Danio rerio*) brain
V. McClain, H.M. Stapleton, F. Tilton and E.P. Gallagher	253	BDE 49 and developmental toxicity in zebrafish
T. Wu, H. Wang, F. Qin, S. Liu, M. Li, P. Xu and Z. Wang	259	Expression of zona pellucida B proteins in juvenile rare minnow (*Gobiocypris rarus*) exposed to 17α-ethinylestradiol, 4-nonylphenol and bisphenol A
L. Truong, K.S. Saili, J.M. Miller, J.E. Hutchison and R.L. Tanguay	269	Persistent adult zebrafish behavioral deficits results from acute embryonic exposure to gold nanoparticles
K. Vijayavel, C.A. Downs, G.K. Ostrander and R.H. Richmond	275	Oxidative DNA damage induced by iron chloride in the larvae of the lace coral *Pocillopora damicornis*
M.S. Tellis, D. Alsop and C.M. Wood	281	Effects of copper on the acute cortisol response and associated physiology in rainbow trout
B.-M. Kim, J.-S. Rhee, J.S. Seo, I.-C. Kim, Y.-M. Lee and J.-S. Lee	290	8-Oxoguanine DNA glycosylase 1 (*OGG1*) from the copepod *Tigriopus japonicus*: Molecular characterization and its expression in response to UV-B and heavy metals
P. Doyen, F. Rodius, L. L'Hoste, L. Hoffmann and H.-M. Cauchie	300	Identification and mRNA expression of pi-class glutathione S-transferase and selenium-dependent glutathione peroxidase in the gudgeon *Gobio gobio* exposed to PCB 77
J.J. Brunt, S. Khan and J.J. Heikkila	307	Sodium arsenite and cadmium chloride induction of proteasomal inhibition and HSP accumulation in *Xenopus laevis* A6 kidney epithelial cells
J. Dorts, A. Bauwin, P. Kestemont, S. Jolly, W. Sanchez and F. Silvestre	318	Proteasome and antioxidant responses in *Cottus gobio* during a combined exposure to heat stress and cadmium
O.I. Kubrak, B.M. Rovenko, V.V. Husak, O.Yu. Vasylkiv, K.B. Storey, J.M. Storey and V.I. Lushchak	325	Goldfish exposure to cobalt enhances hemoglobin level and triggers tissue-specific elevation of antioxidant defenses in gills, heart and spleen
P. Martínez-Paz, M. Morales, J.L. Martínez-Guitarte and G. Morcillo	333	Characterization of a cytochrome P450 gene (*CYP4G*) and modulation under different exposures to xenobiotics (tributyltin, nonylphenol, bisphenol A) in *Chironomus riparius* aquatic larvae
E.-J. Won, J.-S. Rhee, R.-O. Kim, K. Ra, K.-T. Kim, K.-H. Shin and J.-S. Lee	344	Susceptibility to oxidative stress and modulated expression of antioxidant genes in the copper-exposed polychaete *Perinereis nuntia*

A. Capaldo, F. Gay, S. Valiante, M. De Falco, R. Sciarrillo, M. Maddaloni and V. Laforgia	352	Endocrine-disrupting effects of nonylphenol in the newt, *Triturus carnifex* (Amphibia, Urodela)
J.-S. Rhee, B.-M. Kim, B.-S. Choi and J.-S. Lee	359	Expression pattern analysis of DNA repair-related and DNA damage response genes revealed by 55 K oligomicroarray upon UV-B irradiation in the intertidal copepod, *Tigriopus japonicus*
P.M.G. Nair and J. Choi	369	Effects of cadmium chloride and nonylphenol on the expression of StAR-related lipid transfer domain containing protein (*START1*) gene in aquatic midge, *Chironomus riparius*
T. Yada	375	Effect of gonadotropin-releasing hormone on phagocytic leucocytes of rainbow trout
S. He, X.-F. Liang, C.-M. Qu, W. Huang, D. Shen, W.-B. Zhang and K.-S. Mai	381	Identification, organ expression and ligand-dependent expression levels of peroxisome proliferator activated receptors in grass carp (*Ctenopharyngodon idella*)
J. Večeřa, N. Krishnan, A. Mithöfer, H. Vogel and D. Kodrík	389	Adipokinetic hormone-induced antioxidant response in *Spodoptera littoralis*
H.I. Falfushynska, L.L. Gnatyshyna and O.B. Stoliar	396	Population-related molecular responses on the effect of pesticides in *Carassius auratus gibelio*
H. Holbech, K.L. Kinnberg, N. Brande-Lavridsen, P. Bjerregaard, G.I. Petersen, L. Norrgren, S. Örn, T. Braunbeck, L. Baumann, C. Bomke, M. Dorgerloh, E. Bruns, C. Ruehl-Fehlert, J.W. Green, T.A. Springer and A. Gourmelon	407	Comparison of zebrafish (*Danio rerio*) and fathead minnow (*Pimephales promelas*) as test species in the Fish Sexual Development Test (FSDT)
W. Xiong, L. Bai, R.-U.-H. Muhammad, M. Zou and Y. Sun	416	Molecular cloning, characterization of copper/zinc superoxide dismutase and expression analysis of stress-responsive genes from *Eisenia fetida* against dietary zinc oxide
A.J. Esbaugh, K.V. Brix, E.M. Mager, K. De Schamphelaere and M. Grosell	423	Multi-linear regression analysis, preliminary biotic ligand modeling, and cross species comparison of the effects of water chemistry on chronic lead toxicity in invertebrates

Vol. 155C, No. 3

General papers

F.Z. Mónica, J. Rojas-Moscoso, M. Porto, A.A. Schenka, E. Antunes, J.C. Cogo and G. De Nucci	433	Immunohistochemical and functional characterization of nitric oxide signaling pathway in isolated aorta from *Crotalus durissus terrificus*
L.K. Shelley, P.S. Ross and C.J. Kennedy	440	The effects of an *in vitro* exposure to 17β-estradiol and nonylphenol on rainbow trout (*Oncorhynchus mykiss*) peripheral blood leukocytes
Z.-h. Qi, Y.-f. Liu, W.-n. Wang, Y. Xin, F.-x. Xie and A.-L. Wang	447	Fatty acid binding protein 10 in the orange-spotted grouper (*Epinephelus coioides*): Characterization and regulation under pH and temperature stress
C.R.B. Nascimento, M.M. Souza and C.B.R. Martinez	456	Copper and the herbicide atrazine impair the stress response of the freshwater fish *Prochilodus lineatus*
T.V. Parodi, M.A. Cunha, C.G. Heldwein, D.M. de Souza, Á.C. Martins, L.d.O. Garcia, W.W. Junior, J.M. Monserrat, D. Schmidt, B.O. Caron, B. Heinzmann and B. Baldisserotto	462	The anesthetic efficacy of eugenol and the essential oils of *Lippia alba* and *Aloysia triphylla* in post-larvae and sub-adults of *Litopenaeus vannamei* (Crustacea, Penaeidae)

J. Costa, M.A. Reis-Henriques, L.F.C. Castro and M. Ferreira	469	Gene expression analysis of ABC efflux transporters, CYP1A and GSTα in Nile tilapia after exposure to benzo(a)pyrene
J. Jiang, Y. Shi, Z. Shan, L. Yang, X. Wang and L. Shi	483	Bioaccumulation, oxidative stress and HSP70 expression in *Cyprinus carpio* L. exposed to microcystin-LR under laboratory conditions
S. Chakrabarty, A. Rajakumar, K. Raghuveer, P. Sridevi, A. Mohanachary, Y. Prathibha, L. Bashyam, A. Dutta-Gupta and B. Senthilkumaran	491	Endosulfan and flutamide, alone and in combination, target ovarian growth in juvenile catfish, *Clarias batrachus*
L.J. Mundy, D. Crump, S.P. Jones, A. Konstantinov, F. Utley, D. Potter and S.W. Kennedy	498	Induction of cytochrome P4501A by highly purified hexachlorobenzene in primary cultures of ring-necked pheasant and Japanese quail embryo hepatocytes
A. Pérez-Jiménez, H. Peres, V.C. Rubio and A. Oliva-Teles	506	The effect of hypoxia on intermediary metabolism and oxidative status in gilthead sea bream (*Sparus aurata*) fed on diets supplemented with methionine and white tea
L. Zhang, L. Qiu, H. Wu, X. Liu, L. You, D. Pei, L. Chen, Q. Wang and J. Zhao	517	Expression profiles of seven glutathione S-transferase (*GST*) genes from *Venerupis philippinarum* exposed to heavy metals and benzo[a]pyrene
M. Wu, I.A. Khan and A.K. Dasmahapatra	528	Valproate-induced teratogenesis in Japanese rice fish (*Oryzias latipes*) embryogenesis

Vol. 155C, No. 4

General papers

N. Umasuthan, K. Saranya Revathy, Y. Lee, I. Whang, C.Y. Choi and J. Lee	539	A novel molluscan sigma-like glutathione S-transferase from Manila clam, *Ruditapes philippinarum*: Cloning, characterization and transcriptional profiling
F. Gagné, M. Douville, C. André, T. Debenest, A. Talbot, J. Sherry, L.M. Hewitt, R.A. Frank, M.E. McMaster, J. Parrott and G. Bickerton	551	Differential changes in gene expression in rainbow trout hepatocytes exposed to extracts of oil sands process-affected water and the Athabasca River
S. Misra, D. Peak, N. Chen, C. Hamilton and S. Niyogi	560	Tissue-specific accumulation and speciation of selenium in rainbow trout (*Oncorhynchus mykiss*) exposed to elevated dietary selenomethionine
L.A. Baldissarelli, K.M. Capiotti, M.R. Bogo, G. Ghisleni and C.D. Bonan	566	Arsenic alters behavioral parameters and brain ectonucleotidases activities in zebrafish (*Danio rerio*)
L.V.T. Garner and R.T. Di Giulio	573	Glutathione transferase pi class 2 (GSTp2) protects against the cardiac deformities caused by exposure to PAHs but not PCB-126 in zebrafish embryos
G. Santovito, E. Piccinni, F. Boldrin and P. Irato	580	Comparative study on metal homeostasis and detoxification in two Antarctic teleosts
C. Vouras and S. Dailianis	587	Evidence for phosphatidylinositol-3-OH-kinase (PI3-kinase) involvement in Cd-mediated oxidative effects on hemocytes of mussels
	I	Contents of Volume of 155
	VI	Subject Index
	IX	Author Index

SUBJECT INDEX

Vol. 155C, Nos. 1–4

ABC transporter, 198
ABC transporters, 469
Accumulation, 560
Acetylcholinesterase, 247
Acid phosphatase, 182
Activating transcription factor 3, 213
Acute, 64
Acute exposure, 269
Adipokinetic hormone, 389
Adrenal gland disruption, 352
Allele specific gene expression, 102
Amphibian, 307
Amphibian endocrine disruption, 352
Anesthesia, 462
Antarctic fish, 580
Antioxidant defenses, 506
Antioxidant enzymes, 318, 325, 389, 580
Antioxidant response, 389
Aorta, 433
Aquatic toxicology, 169
Aromatase inhibitor, 407
Arsenic, 206, 566
Assembly, 95
Astrocytes, 213
Atlas, 169
Autism, 109
Autism spectrum disorder, 528

Bacterial challenge, 539
BDE 47, 253
Behavior, 269
Behavioral activation, 33
Benzo[a]pyrene, 517
Biological activity, 539
Biomarker, 11, 416, 517
Biotransformation, 551
Bisphenol A (BPA), 333
Bivalve molluscs, 175
Brain aromatase, 491
2-bromo palmitate, 381
Bystin, 213

C. riparius, 369
Cadmium, 190, 238, 318, 587
Cadmium chloride, 369
Cancer chemoprevention, 121
Carassius auratus gibelio, 396
Cardiotoxicity, 573
Catalase, 344
Catfish, 491
cDNA cloning, 416
cDNA sequence, 381
Cell culture, 136
Ceriodaphnia dubia, 423
Chromatin, 175
Chronic, 64
Clastogenicity, 143
Clofibrate, 381
Cobalt, 325
Coding sequences, 300
Copepod, 290
Copper, 344
Copper nanoparticles, 219
Copper salt, 219
Coral, 275
Cortisol, 33, 456
Crotalus durissus, 433
Cryopreservation, 49, 136
CYP genes, 333
Cyprinus carpio L., 483
Cysteine, 238
Cytochrome P450, 469
Cytochrome P4501A, 498
Cytokeratin, 213

Danio rerio, 160
15-deoxy-$\Delta^{12,14}$ prostaglandin J2, 381
Development, 26, 253
Dietary ZnO, 416
DIGE, 81
Dioxin, 498
Dissolved organic carbon, 423
DNA repair, 175, 359
DNA repair activity, 551
DNA-AP, 275
Drug resistance, 198

Early life stage toxicity, 18
Ecotoxicological, 416
Ecto-5′-nucleotidase, 566
Ectonucleotidases, 566
Efflux, 238
EGF-receptor, 71
Eisenia fetida, 416
Electrophysiology, 151
Emamectin benzoate, 198
Endocrine disrupters, 407
Endocrine disruption, 491
Endosulfan, 491
Enterocytes, 238
Environmental carcinogenesis, 121
Environmental contaminants, 352
Epilepsy, 33
Epinephelus coioides, 447
EROD, 498
Essential oils, 462
Estradiol, 440
Estrogen receptor, 440
Estrogenicity, 551
Eugenol, 462
Expression, 190
Expression level, 300

Fathead minnow, 407
Fatty acid binding protein10, 447
Fertility, 55
Fetal valproate syndrome, 528
Fish, 11, 49, 238, 318, 469, 560
Fish tuberculosis, 39
Fluoxetine, 109
Flutamide, 491
Free radicals, 182, 275
Freshwater, 281
Frog, 307
Fullerene, 206

Gene expression, 11, 259, 369, 375, 447
Gene expression profile, 219
Gene regulation, 81
Genomics, 169
Genotoxicity, 175, 182, 396
Germplasm, 49
Gfp toxicity, 39
GH, 375
Glucose, 281, 456
Glutathione, 389, 580
Glutathione *S*-transferase, 344
Glutathione S-transferase, 517, 539
Glutathione S-transferase alpha detoxification, 469
Glutathione-S-transferase omega, 206
Glutathione transferase, 573
Glycogen, 281, 456
GnRH, 375
Gobiocypris rarus, 259
Gold nanoparticles, 269
Goldfish, 325
GPx, 300
Grass carp, 381
GSEA, 109

doi:10.1016/S1532-0456(12)00034-8

GST enzymes, 333
Gudgeon, 300

Haemocytes, 182
Health management, 160
Heat shock proteins, 307
Heat stress, 318
Heavy metals, 290, 517
Hematology, 456
Hemocytes, 587
Hemoglobin, 325
Hepatocytes, 206, 498
Hexachlorobenzene, 498
Hexavalent chromium, 143
High-throughput processing, 49
Histone variants, 175
Homeostasis, 281
HSP27, 190
HSP70, 483
5-HT, 151
Human, 143
Hybrid, 71
Hydrogen peroxide, 290
Hypothalamus–pituitary–interrenal axis, 281
Hypoxia, 11, 18, 228, 506

IL-1, 375
Immune system, 375, 440
Induced gene expression, 89
Insects, 333
Intermediary metabolism, 506
Interspecies hybrids, 102
Iron, 238

Japanese rice fish, 528

Larimichthys crocea, 190
Ligand-dependent expression levels, 381
Lipid peroxidation, 587
Lipid peroxides, 325
Locomotion, 566
Long-term effects, 269
Lung, 136

MALDI-TOF, 81
Manila clam, 539
Marine mammal, 136
Mass spectrometry, 81
Medaka, 11, 18, 160
Melanoma, 64, 71, 81
Metal, 275
Metallothionein, 344, 396, 580
Metals, 580
Metamorphosis, 128
Methionine, 506
Microarray, 11, 128, 359
Microcystin-LR, 247, 483
Mitochondria, 228
Molecular chaperone, 307
Molecular toxicology, 18
Morpholino, 573
mRNA expression, 416, 498
Multiplex embryos histoarray, 18

Na^+/K^+ ATPase, 281
Na^+/K^+-ATPase, 456
Neurological development, 109
Neurotoxicity, 247
Next generation sequencing, 102
NGS, 95
Nitric oxide, 587
Nitric oxide synthase, 433
NMDA, 151
Nonylphenol, 352, 369, 440
Nonylphenol (NP), 333
Nucleoside triphosphate diphosphohydrolase, 566

Oil sands process-affected water (OSPW), 551
Okadaic Acid, 175
Oligochaeta, 219
Onchorhynchus mykiss, 281
Oreochromis niloticus, 469
Organ colonization, 39
Organ expression, 381
Oryzia latipes, 39
Oryzias latipes, 160
Ovarian aromatase, 491
Ovarian development, 491
Oxidative damage, 506
Oxidative stress, 228, 275, 290, 318, 389, 396, 462, 483, 551
8-oxoguanine DNA glycosylase 1, 290

P450 enzymes, 333
Patch clamping, 151
Pathogen control, 160
Pb, 423
PCB 77, 300
PCR, 259
Perinereis nuntia, 344
Peroxisome proliferator activated receptors, 381
Pesticide, 396
pH and low temperature stress, 447
Phenome project, 169
Phosphodiesterase type 5, 433
Phred, 95
PI3-kinase, 587
Pigment cell, 71
pi-GST, 300
PKC, 587
Plasma sodium, 456
Plasticity, 151
Platyfish, 160
Polychlorinated biphenyls, 573
Polycyclic aromatic hydrocarbons, 573
Potassium, 281

Prochloraz, 407
Pro-convulsant action, 33
Proteasomal activity, 318
Proteasomal inhibition, 307
Protein carbonyls, 389
Protein kinase C, 151
Protein phosphatase, 483
Proteomics, 81
Pygmy sperm whale, 136

Quality, 95
Quantitative real time PCR, 89
Quantitative real-time PCR, 447
Quantity, 95

Rainbow trout, 121
Reactive oxygen species, 325, 344, 483
Real-time PCR, 389
Real-time quantitative reverse transcription PCR, 259
Regeneration, 213
Research facilities, 160
Rotifer, 423

Salamander, 128
Salinity, 228
Scylla serrata, 228
Sea louse, 198
Seawater, 281
Seizures, 33
Selenomethionine, 560
Sex ratio, 407
Sexual differentiation, 407
Short read, 95
Shrimp, 462
Sigma class, 539
Skin cells, 143
SLICE®, 198
Snail, 423
SNP detection, 102
SOD isoenzymes, 506
Sodium, 281
SOLiD, 102
Soluble guanylyl cyclase, 433
Speciation, 560
Sperm cryopreservation, 55
Sperm whale, 143
START1, 369
Stress, 190
Stress on stress, 182
Superoxide, 587

Tannic acid, 389
Teleost, 440
Telomerase, 89
Telomerase reverse transcriptase (TERT), 89
Temperature, 190, 318
Teratogen, 528
Tigriopus japonicus, 290, 359

TNF, 375
Toxicity, 325
Toxicogenomics, 219
Tph2 immunoreactivity, 491
Transcriptional analysis, 539
Transcriptional control, 71
Tributyltin (TBTO), 333
Triturus carnifex, 352
Trout, 375
Trout hepatocytes, 551
Tumor suppressor, 71

Ubiquitin, 307
Ultra-low dose cancer study, 121
Ultraviolet light (UVB), 89
Ultraviolet radiation, 64
Ultraviolet-B (UV-B), 359
Uptake, 238
UV-B, 290
UVB, 64

Valproic acid, 528
Velvet, 95
Venerupis philippinarum, 517
VenlafaxineCarbamazepine, 109
Vitellogenin, 407, 551

Water pollutants, 456
Water pollution, 352
Water quality, 423
Western blot, 447
White tea, 506
Wortmannin, 587

XANES spectroscopy, 560
Xenoestrogen, 440
Xiphophorus, 64, 71, 81, 89, 102, 160
Xiphophorus maculatus, 55
xmrk, 71

Zebrafish, 26, 33, 160, 169, 206, 213, 247, 253, 269, 407, 566, 573
Zinc, 26, 238
Zinc transporter, 26
Zona pellucida, 259

AUTHOR INDEX

Vol. 155C, Nos. 1–4

Alsop, D., 281
Amores, A., 95, 102
Amorim, M.J.B., 219
André, C., 551
Antunes, E., 433
Au, D.W.T., 18
Ausió, J., 175
Azevedo Costa, C.L., 206

Baatz, J.E., 136
Bai, L., 416
Baldissarelli, L.A., 566
Baldisserotto, B., 462
Bashyam, L., 491
Bathke, A.C., 128
Baumann, L., 407
Bauwin, A., 318
Beldorth, I., 11, 89, 102
Bickerton, G., 551
Bjerregaard, P., 407
Bogo, M.R., 247, 566
Boldrin, F., 580
Bomke, C., 407
Bonan, C.D., 247
Bonan, C.D., 566
Booth, R.E., 11, 81, 89
Boswell, M.G., 11
Brande-Lavridsen, N., 407
Braunbeck, T., 407
Brix, K.V., 423
Bron, J.E., 198
Bruns, E., 407
Brunt, J.J., 307

Cachat, J., 33
Capaldo, A., 352
Capiotti, K.M., 566
Carlson, S.L., 151
Carmichael, S., 198
Caron, B.O., 462
Castro, L.F.C., 469
Catchen, J., 95, 102
Cauchie, H.-M., 300
Chainy, G.B.N., 228
Chakrabarty, S., 491
Chaves, I.S., 206
Chen, L., 517
Chen, N., 560
Cheng, K.C., 169
Cheung, N.K.M., 18
Choi, B.-S., 359
Choi, C.Y., 539
Choi, J., 369
Cogo, J.C., 433
Costa, J., 469
Crump, D., 498
Cunha, M.A., 462

Dailianis, S., 182, 587
Dasmahapatra, A.K., 528
David, W.M., 81
de Azevedo, M.B., 247
de Carvalho, L.M., 206
de Castro Leão, J., 247
De Coen, W., 219
De Falco, M., 352
De Nucci, G., 433
De Schamphelaere, K., 423
de Souza, D.M., 462
Debenest, T., 551
Di Giulio, R.T., 573
DiLeo, J., 33
Dorgerloh, M., 407
Dorts, J., 318
Douville, M., 551
Downs, C.A., 275
Downs, K.P., 89
Doyen, P., 300
Dukovcic, S., 26
Dutta-Gupta, A., 491

Eirín-López, J.M., 175
Ennis, D.G., 39, 160
Esbaugh, A.J., 423

Falfushynska, H.I., 396
Fernandez, A.A., 64
Fernández-Tajes, J., 175
Ferraz, L., 206
Ferreira, J.L.R., 206
Ferreira, M., 469
Fieber, L.A., 9, 151
Frank, R.A., 551

Gagné, F., 551
Gaikwad, S., 33
Gallagher, E.P., 253
Gallier, K., 89
García, D.M., 213
Garcia, L.d.O., 462
Garcia, R., 64
Garcia, T., 89, 102
Garcia, T.I., 95
Garner, L.V.T., 573
Gay, F., 352
Ghisleni, G., 566
Giannapas, M., 182
Gnatyshyna, L.L., 396
Gomes, S.I.L., 219
González-Romero, R., 175
Gourmelon, A., 407
Green, J.W., 407
Grosell, M., 423
Grossman, L., 33

Hamilton, C., 560
Hardin, K., 26
Harper, C., 160
Hart, P., 33
Hazlewood, L., 55
He, S., 381
Heater, S.J., 81
Heikkila, J.J., 307
Heinzmann, B., 462
Heldwein, C.G., 462
Heumann, J., 198
Hewitt, L.M., 551
Hinton, D.E., 18, 169
Ho, E., 26
Hobson, B., 26
Hoffmann, L., 300
Holbech, H., 407
Holmes, A., 143
Hu, E., 49
Huang, W., 381
Huggins, P., 128
Husak, V.V., 325
Hutchison, J.E., 269

Irato, P., 580

Jiang, J., 483
Johnson, C.K., 128
Jolly, S., 318
Jones, S.P., 498
Joshi, P.P., 109
Junior, W.W., 462

Kalueff, A.V., 33
Karnis, L., 182
Kennedy, C.J., 440
Kennedy, S.W., 498
Kent, M.L., 160

doi:10.1016/S1532-0456(12)00035-X

Kestemont, P., 318
Khan, I.A., 528
Khan, S., 307
Kim, B.-M., 290, 359
Kim, I.-C., 290
Kim, K.-T., 344
Kim, R.-O., 344
Kinnberg, K.L., 407
Kirk, L.M., 11
Kist, L.W., 247
Klaper, R.D., 109
Kodrik, D., 389
Koke, J.R., 213
Konstantinov, A., 498
Krishnan, N., 389
Kubrak, O.I., 325
Kwong, R.W.M., 238

LaCerte, C., 143
Laforgia, V., 352
Lawrence, C., 160
Lee, J., 539
Lee, J.-S., 290, 344, 359
Lee, Y., 539
Lee, Y.-M., 290
L'Hoste, L., 300
Li, M., 259
Li Chen, T., 143
Liang, X.-F., 381
Liu, S., 259
Liu, X., 517
Liu, Y.-f., 447
Lushchak, V.I., 325

Maddaloni, M., 352
Mager, E.M., 423
Mai, K.-S., 381
Mancia, A., 136
Martinez, C.B.R., 456
Martínez-Guitarte, J.L., 333
Martínez-Paz, P., 333
Martino, J., 143
Martins, Á.C., 462
Mattingly, C.J., 169
McClain, V., 253
McFee, W.E., 136
McMaster, M.E., 551
Méndez, J., 175
Miller, G., 26
Miller, J.M., 269
Misra, S., 560
Mitchell, D.L., 64
Mithöfer, A., 389
Mohanachary, A., 491
Mónica, F.Z., 433
Monserrat, J.M., 206, 462
Morales, M., 333
Morcillo, G., 333
Muhammad, R.-U.-H., 416
Mundy, L.J., 498
Murray, K., 160
Mutoji, K.N., 39

Nair, P.M.G., 369
Nascimento, C.R.B., 456
Neve, L.D., 213
Newton, D.A., 136
Niyogi, S., 238, 560
Norrgren, L., 407
Novais, S.C., 219

Oehlers, L., 81
Oliva-Teles, A., 506
Örn, S., 407
Ostrander, G.K., 275

Paital, B., 228
Paniker, L., 64
Parodi, T.V., 462
Parrott, J., 551
Pasquali, A., 89
Peak, D., 560
Pei, D., 517
Pereira, T.C.B., 247
Peres, H., 506
Perez, A.N., 81
Pérez-Jiménez, A., 506
Petersen, G.I., 407
Piccinni, E., 580
Planchart, A., 169
Porto, M., 433
Postlethwait, J., 95, 102
Potter, D., 498
Prathibha, Y., 491
Putta, S., 128

Qi, Z.-h., 447
Qin, F., 259
Qiu, L., 517
Qu, C.-M., 381

Ra, K., 344
Raghuveer, K., 491
Rajakumar, A., 491
Regneri, J., 71
Reis-Henriques, M.A., 469
Rhee, J.-S., 290, 344, 359
Richetti, S.K., 247
Richmond, R.H., 275
Rivera-Casas, C., 175
Rodius, F., 300
Rojas-Moscoso, J., 433
Rosemberg, D.B., 247
Ross, P.S., 440
Rovenko, B.M., 325
Rubio, V.C., 506
Ruehl-Fehlert, C., 407

Saili, K.S., 269
Sanchez, W., 318
Sanders, G.E., 160
Santovito, G., 580
Saranya Revathy, K., 539
Savage, A.A., 213
Savage, M., 11, 89
Savage, M.G., 55
Schartl, M., 71, 95, 102
Schenka, A.A., 433
Schmidt, D., 462
Schoergendorfer, A., 128
Sciarrillo, R., 352
Scott-Fordsmand, J.J., 219
Senthilkumaran, B., 491
Seo, J.S., 290
Shan, Z., 483
Shelley, L.K., 440
Shen, D., 381
Shen, Y., 89, 95, 102
Sherry, J., 551
Shi, L., 483
Shi, Y., 483
Shin, K.-H., 344
Silvestre, F., 318
Soares, A.M.V.M., 219
Souza, M.M., 456
Springer, T.A., 407
Spyropoulos, D.D., 136
Sridevi, P., 491
Stapleton, H.M., 253
Stewart, A., 33
Stoliar, O.B., 396
Storey, J.M., 325
Storey, K.B., 325
Stromberg, A.J., 128
Sturm, A., 198
Suciu, C., 33
Sun, Y., 416

Talbot, A., 551
Tanguay, R.L., 9, 26, 269
Tellis, M.S., 281
Thomas, M.A., 109
Thompson, W.D., 143
Tiersch, T.R., 49, 55, 167
Tildesley, A., 198
Tilton, F., 253
Traber, M.G., 26
Truong, L., 269

Umasuthan, N., 539
Utley, F., 498

Valiante, S., 352
Varga, Z.M., 167
Vasylkiv, O.Yu., 325
Večeřa, J., 389
Ventura-Lima, J., 206
Vijayavel, K., 275
Vogel, H., 389

Voss, S.R., 128
Vouras, C., 587

Wagner, J., 102
Walter, R.B., 9, 11, 55, 81, 89, 95, 102
Wang, A.-L., 447
Wang, H., 259
Wang, Q., 517
Wang, S., 11
Wang, W.-n., 447
Wang, X., 483
Wang, Y., 11
Wang, Z., 259
Wang, Z.-Y., 190
Warren, W., 102
Wells, M.C., 11
Whang, I., 539
Williams, D.E., 9, 121
Williams, L.R., 33
Wise Jr., J.P., 143
Wise Sr., J.P., 143
Wise, S.S., 143
Won, E.-J., 344
Wong, C.P., 26
Wong, K., 33
Wood, C.M., 281
Wu, H., 517
Wu, M., 528
Wu, N., 33
Wu, T., 259

Xie, F.-x., 447
Xin, Y., 447
Xiong, W., 416
Xu, P., 259

Yada, T., 375
Yang, H., 49, 55
Yang, L., 483
Yang, Q.-L., 190
Yao, C.-L., 190
You, L., 517
Yunes, J.S., 247

Zhang, L., 517
Zhang, W.-B., 381
Zhang, Z., 11, 102
Zhao, J., 517
Zou, M., 416